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"Space Mountain" Pump Prices

Testimony of Robert McNally
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Subcommittee on Energy and Power of the House Committee on Energy and Commerce
"The American Energy Initiative"
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Chairman Whitfield, Ranking Member Rush, members of the Committee, thank you for the opportunity to provide testimony to you on the American Energy Initiative. I appreciate your calling this hearing on the crucial topic of rising gasoline prices, and I am honored that you have asked me to share my perspective and views.

I approach this subject with twenty-one years of professional experience analyzing and participating in energy markets and policymaking. I have spent the bulk of my career analyzing the global oil market, energy, and economic policymaking. I also served as Special Assistant to the President for Economic Policy on the White House National Economic Council from January 2001 to June 2003 and Senior Director for International Energy on the National Security Council from January 2003 to June 2003. I am currently an independent analyst and do not represent any entity. The views expressed here are entirely my own.

The subject of today's hearing is rising gasoline prices, which hurt family budgets and imperil our economic recovery. Before evaluating the factors that contribute to the most recent rise, it is worth considering that gasoline price upswings are becoming more frequent and consumers are wondering why this is the case. As Michael Levi and I wrote last summer in Foreign Affairs[1]:

> For most Americans, from the late 1970s until just a few years ago, following the price of gasoline was like riding the Disney World attraction It's a Small World: a shifting but gentle, basically unremarkable, experience. But since 2005, it has felt more like Space Mountain--unpredictable, scary, gut-wrenchingly volatile. Between January 2007 and July 2008, the price of a barrel of oil rose from $50 to more than $140; by the end of 2008, it had crashed to just over $30; less than a year later, it had breached $80 again. In early 2011, on the back of strong global demand and the political turmoil in the Middle East and North Africa, oil sold for over $120 a barrel. Today, as prices continue to swing wildly, most Americans are wondering why they are on this ride and how to get off.

In March of 2012 we find ourselves again on the upswing, with pump prices at all-time highs for this time of year. Gasoline prices are rising mainly because crude oil prices are rising, though the shutdown of refinery capacity in the US, Europe, and Caribbean will also play a role.

Crude oil prices are rising mainly because of global supply and demand fundamentals, which are tight, especially outside the United States, as well as actual and threatened geopolitical disruption risks. OPEC spare capacity, almost entirely held in Saudi Arabia and which in the past has been used to stabilize global oil prices and reassure market participants that geopolitical disruptions could be offset, has been and will likely remain too low to do so.

Unfortunately, there are no effective policy options to counter the short term crude and gasoline price volatility caused by a fundamentally tight and fearful global oil market. Using the strategic petroleum reserve to counter short term price volatility absent a severe supply interruption could not only be irresponsible but also counterproductive.

There are policies that can reduce future price volatility and enable our consumers to adjust to it in the medium and longer term. They range from improving the quality of data in order to reduce the uncertainty that contributes to volatility to improving the funding and focus of energy-related research and development. A crucial step is to increase oil supply everywhere: In a tight market and especially when spare capacity is otherwise low, every extra barrel of supply on the margin counts and can help reduce future price volatility. If North America succeeds at increasing oil supply by some 6 mb/d or more, then it would free up more Middle East oil to go to Asia or remain in spare capacity to offset a disruption.

1. "Crude Predicament: The Era of Volatile Oil Prices," Foreign Affairs, July/August, 2011, see attachment.

I would like to now elaborate on some of these points.

Current rising gasoline prices are due to tight global supply demand fundamentals and geopolitical risk

Gasoline prices have risen in tandem with global crude prices, reflecting the fact, as EIA has noted, that "[t]he single biggest factor in the price of gasoline is the cost of the crude oil from which it is made."[2] So far this year, Brent crude prices are up 14%, NY wholesale gasoline prices are up 16%, and retail gasoline prices are up 14%.[3] US wholesale gasoline prices reflected in spot month futures contract prices are up 16-19%.

Crude price increases, as the Energy Information Administration (EIA) recently noted, are mainly due to unexpected tightening in global supply demand fundamentals, lower than expected OPEC spare capacity, and considerable geopolitical disruptions and disruption risk, especially related to Iran. Citing from EIA's February 29 report:[4]

> EIA estimates that the world oil market has become increasingly tight over the first two months of this year. Oil prices have risen since the beginning of the year and are currently at a high level. Global liquid fuels consumption is at historically high levels. While the economic outlook, especially in Europe, remains uncertain, continued growth is expected. Unusually cold weather in Europe contributed to tighter markets by increasing the demand for heating oil, particularly during February.
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> With respect to supply, the world has experienced a number of supply interruptions in the last two months, including production drops in South Sudan, Syria, Yemen, and the North Sea. Both the United States and the European Union (EU) have acted to tighten sanctions against Iran, including measures with both immediate and future effective dates. There is some evidence that these measures may already be causing some adjustments in oil supply patterns. For example, there is emerging evidence that some shipments of Iranian crude oil under existing contracts are being curtailed due to the unwillingness of U.S. and EU insurance providers to cover them, even though the EU sanctions only require existing oil contracts to be completely phased out by July 1, 2012.
>
> Finally, spare crude oil production capacity, while estimated to be higher than during the 2003 to 2008 period, is quite modest by historical standards, especially when measured as a percentage of global oil production and considered in the context of current geopolitical uncertainties, including, but not limited to, the situation in Iran.

As shown in Figure 1, commercial oil inventories in OECD countries *outside North America* are low.

As shown in Figure 2, spare capacity is low, geopolitical risk is high, and a conflict that would block the Strait of Hormuz would dwarf any disruption in modern history and rattle traders' nerves, contributing to a risk premium (see Figure 3).

In addition to the pressure imposed by rising crude prices, gasoline prices have also been driven higher by an unusually large shutdown of refining capacity. As EIA noted,[5] in September, 2001 two Pennsylvania refineries amounting to 27% of East Coast refining capacity closed. If a third, planned Pennsylvania refinery closure is included, East Coast refinery capacity is set to fall 52% within one year. In addition, the Hovensa refinery in the US Virgin Islands closed, as did refineries in Europe that supply the US with gasoline. This rash of refinery closures is expected to considerably tighten the East Coast gasoline market and sparked buying of gasoline futures starting in January. Going forward, and irrespective of underlying crude oil prices, the East Coast – the nation's largest gasoline market – will need to pay higher prices for long-haul imports, competing for waterborne barrels in South America, where gasoline demand is rising sharply.

Crude oil price volatility is here to stay, and wider pump price swings will unavoidably result

Oil prices are going to gyrate more wildly than in the past as Saudi Arabia and OPEC's ability to prevent price spikes erodes due to reduced spare capacity. The world oil market is leaving the relatively stable OPEC era and entering a new "Swing Era" in which large price swings rather than cartel production changes will balance global oil supply and demand. The Swing Era portends much higher oil price volatility, investment uncertainty in conventional and alternative energy and transportation technologies, and lower consensus estimates of global GDP growth. Ironically, Western governments and investors will miss OPEC, or at least the relative price stability OPEC tried to provide.

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[2] http://www.eia.gov/energyexplained/index.cfm?page=gasoline_factors_affecting_prices
[3] EIA data, through February 27, 2012
[4] *The Availability and Price of Petroleum and Petroleum Products Produced in Countries Other Than Iran*, EIA, February 29 2012
[5] *This Week In Petroleum*, EIA, January 19, 2012

To elaborate further, the changing role of OPEC - with its implications for oil price stability - is the most important, and so far overlooked, feature of global energy markets. It will have enormous consequences for US economic and foreign policy, especially in our bilateral relations with Saudi Arabia, as noted further below. In short, soaring global demand and constrained supply growth is causing OPEC to lose its spare capacity cushion and therefore its ability to stabilize oil prices. While intuitively OPEC losing control may seem like a good thing, it actually means global oil prices, and therefore our pump prices, are going to swing much more wildly in the future, at times high enough to contribute to recessions as they did in 2008.

As a commodity, oil exhibits what economists call a very low price elasticity of demand. In plain English, this means supply and demand are very slow to respond to price shifts. Oil is a must-have commodity with no exact substitutes; when pump prices rise, most consumers have little choice in the near term but to pay more rather than buy less. And on the supply side, it takes years to develop new resources, even when the price incentive to do so rises sharply.

Since the beginning of the modern oil market, producers have tried to mitigate the tendency of oil prices to swing wildly. Standard Oil, the Texas Railroad Commission and the "Seven Sisters" (major western oil companies) succeeded at stabilizing prices by controlling supply, most importantly by holding spare production capacity back from the market and using it to balance swings in supply and demand. The 1967 Arab oil embargo did not lead to a major oil disruption or price spike, partly because the United States had spare capacity in reserve and increased production to make up for lost Arab producer exports. The 1973 Arab oil embargo did lead to an oil price spike, mainly because the year before – in March 1972 to be exact – the United States ran out of spare capacity.

OPEC took over control of the global oil market from the US and the Seven Sisters in the early 1970s. Since the mid-1980s, OPEC's main tool to stabilize prices has been holding and using spare production capacity. If demand jumped unexpectedly or if supplies were suddenly disrupted, OPEC producers with spare capacity, especially Saudi Arabia, would release more oil, reducing the need for prices to swing in order to balance supply and demand.

But the 2004-2008 period marked the first time since 1972 that capacity nearly ran out[6] absent a major conflict in the Persian Gulf. As in 1972, the reason was demand was racing faster than production. But today, no new cartel is waiting in the wings to satisfy global crude appetites. In 2008, market balance was achieved by sharply rising oil prices along with a sharp decline in demand induced by the financial crisis. While many in Washington, Paris, Riyadh, and Beijing publicly blamed financial market participants, energy experts and economists pointed instead to strong demand for a price inelastic commodity running up against a finite supply.

Going forward, OPEC will still be able to influence how and when oil prices bottom. It can and likely will still take oil off the market to keep prices from falling or to raise them, as it did in late 2008 and 2009.

But OPEC's ability – really, Saudi Arabia's ability – to prevent damaging price spikes has eroded. Therefore, a replay of the mid-2000s is more a question of when than if. Recently, non-OPEC supply growth and OPEC spare capacity were revised sharply down, suggesting the tightening trend may be underway, though an economic downturn may still soften up the global oil market and cause oil prices to fall.

In general, global GDP growth remains oil intensive, driven by voracious consumption in fast-growing Asian and Middle Eastern markets. While world GDP grows strongly, non-OPEC supply growth is not expected to rise fast enough to meet incremental oil demand, requiring OPEC producers to increase production. But OPEC is not investing enough in total production capacity to meet demand growth and still maintain the *minimum* 4-5 mb/d spare capacity buffer needed to assure market participants it can respond to disruptions or tighter-than-expected fundamentals by adding supply. Saudi Arabia, the main spare capacity holder, says it will hold only 1.5 to 2.0 mb/d of spare capacity, and most other OPEC countries hold little if any back in spare.

Taken together, voracious demand and constrained supply trends mean the world can enjoy 4% GDP growth or double digit crude oil prices, but probably not both. As OPEC fails to cap rising prices, price increases large enough to ratchet down demand will enforce the iron law that at the end of the day the world cannot consume what it cannot produce.

Lower import dependence is welcome but will not insulate motorists from gyrating gasoline prices

Higher US and hemispheric oil and gas production is great news for our economy and energy markets. If the investment and regulatory climate allows industry to realize the full supply potential, it will mean more jobs, improved

[6] Many market participants believe Saudi spare capacity was completely exhausted in the summer of 2008, despite EIA data indicating less than 1 mb/d was remaining. Generally, private market participants tend to believe official estimates of spare capacity are overstated.

resilience to supply disruptions, and a lower current account deficit. Our companies and workers will have opportunities to take advantage of these same techniques and technology to unlock unconventional oil and gas resources abroad.

But the good news must be viewed in perspective. Even if we were entirely self-sufficient in oil, our pump prices would still move up and down with global crude oil prices. Oil is fungible, widely traded, and priced in a global market. A crude price shock anywhere is transmitted to pump price changes everywhere.

Therefore our gasoline prices are and will remain strongly linked to trends and developments in the global oil market, not our import share. As leading oil expert Daniel Yergin wrote in a recent Washington Post editorial, "[t]here is only one world oil market, so the United States – like other countries – will still be vulnerable to disruptions, and the sheer size of the oil resources in the Persian Gulf will continue to make the region strategically important for the world economy."[7]

A temporary logistical distortion has caused a crude glut in the US Midwest but it has not affected gasoline prices much other than in the Rockies

A glut of crude oil has built up in the US Midwest as a result of rising Canadian and US production and infrastructure bottlenecks that prevent this supply from reaching refineries connected to the global oil market. As a result, the price of WTI crude – which is delivered in Cushing, OK – has fallen well below prices of other benchmark crudes, such as Brent. As noted by the Energy Information Administration[8] and illustrated in the attached graph, lower Midcontinent crude prices have not translated into lower gasoline prices in the Midwest. Gasoline prices have generally tracked global crude prices, represented by Brent, and not WTI. The reason is the Midwest must import gasoline and other products by competing for them with markets on the coast that are exposed to global oil prices. An exception is the Rocky Mountain region ("PADD IV"), which has enjoyed lower gasoline prices than the rest of the country because it is much more sufficient in refining capacity.

The main winners from the temporary logistical distortion in the Midwest crude market are refiners who are fortunate enough to buy crude at low prices for their refineries and charge customers global gasoline prices. The losers from this distortion are domestic and Canadian crude producers.

Financial market participants contribute to the formation of prices but there is no evidence they are distorting or manipulating them

Financial market participants play an active and healthy role in forming oil prices. The active participation of financial investors in oil futures and derivatives markets is legal and desirable, as it enables energy consumers and producers to transfer price risk and protect against price swings. They also help bring information to the market and can smooth excessive price swings. Like all market participants, their activities should be well policed for manipulation and fraud. The CFTC and other regulators police actively against instances of fraud or manipulation in financial markets, and recently imposed position limits under Dodd-Frank are intended to prevent excessive speculation. The Commodity Futures Trading Commission is working carefully to build a solid foundation for appropriate position limits, which requires an enormous amount of data collection. If the CFTC is overly hasty or incautious, it could subject the position limits rule to legal challenge or inadvertently chase financial market activity to other venues.

In order to "distort" or "manipulate" prices, financial market participants would have to hoard physical supply and take advantage of weak or broken convergence between paper and physical markets. In the global oil market, there is no evidence of such hoarding or weak paper-physical convergence. In the past years, many US and international regulators and energy officials have investigated the role of financial market participants and oil prices, and to my knowledge none have concluded that financial market participants were distorting or manipulating oil prices or were the primary reason for recent oil price volatility. Authoritative and unbiased official agencies with expertise and access to information have examined the increased participation by financial investors in oil price formation and concluded recent price behavior has been driven mainly by supply-demand fundamentals.[9]

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7. Daniel Yergin, "Oil's new world order," *Washington Post*, October 28, 2011.

8 "Unlike Rocky Mountains motorists, those in the Midwest have not been able to parlay regional refiners' crude cost advantage into relatively lower retail product prices - most likely because the Midwest, for all its recent increases in refinery runs, remains far less self-sufficient than the Rockies in product supply. As Midwest markets continue to pull gasoline from the Gulf Coast, it is the higher cost of bringing in those Gulf Coast barrels, rather than Midwestern production costs, that tends to set Midwest product prices." *This Week In Petroleum*, EIA, January 25, 2012

9 Medium Term Oil and Gas Markets 2012, International Energy Agency, p. 29. See also "Energy and Financial Markets Overview: Crude Oil Price Formation," EIA, May 5, 2011; Box1.4, IMF World Economic Outlook, September 2011, pp 56-60; Dallas Federal Reserve, October

In the new "Space Mountain" era of gyrating oil prices, there will be greater demand by energy consumers and producers to buy insurance from oil price swings and therefore a bigger need for financial market participants to provide that insurance. As Michael Levi and I wrote last summer:

> Policymakers should help facilitate more hedging by encouraging the development of well-regulated financial markets: the point is to relieve those who are exposed to price risks today—from motorists to airlines and other oil-intensive industries—and transfer those risks to speculators, who are more willing and better able to bear them. The Dodd-Frank financial reform legislation of 2010 took some helpful steps in this direction, such as requiring that most transactions be conducted on regulated exchanges and that the Commodity Futures Trading Commission collect and publish better data on a wider range of transactions.
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> Officials should take care not go too far, however, and prescribe overly harsh limits on speculative bets in energy futures, and other costly barriers for firms that need to hedge. A blanket crackdown on hedging and speculation would only increase firms and consumers' exposure to volatility, by shrinking financial markets and chasing hedging to less transparent and less regulated venues."[10]

Strategic stocks should not be used to smooth gasoline prices

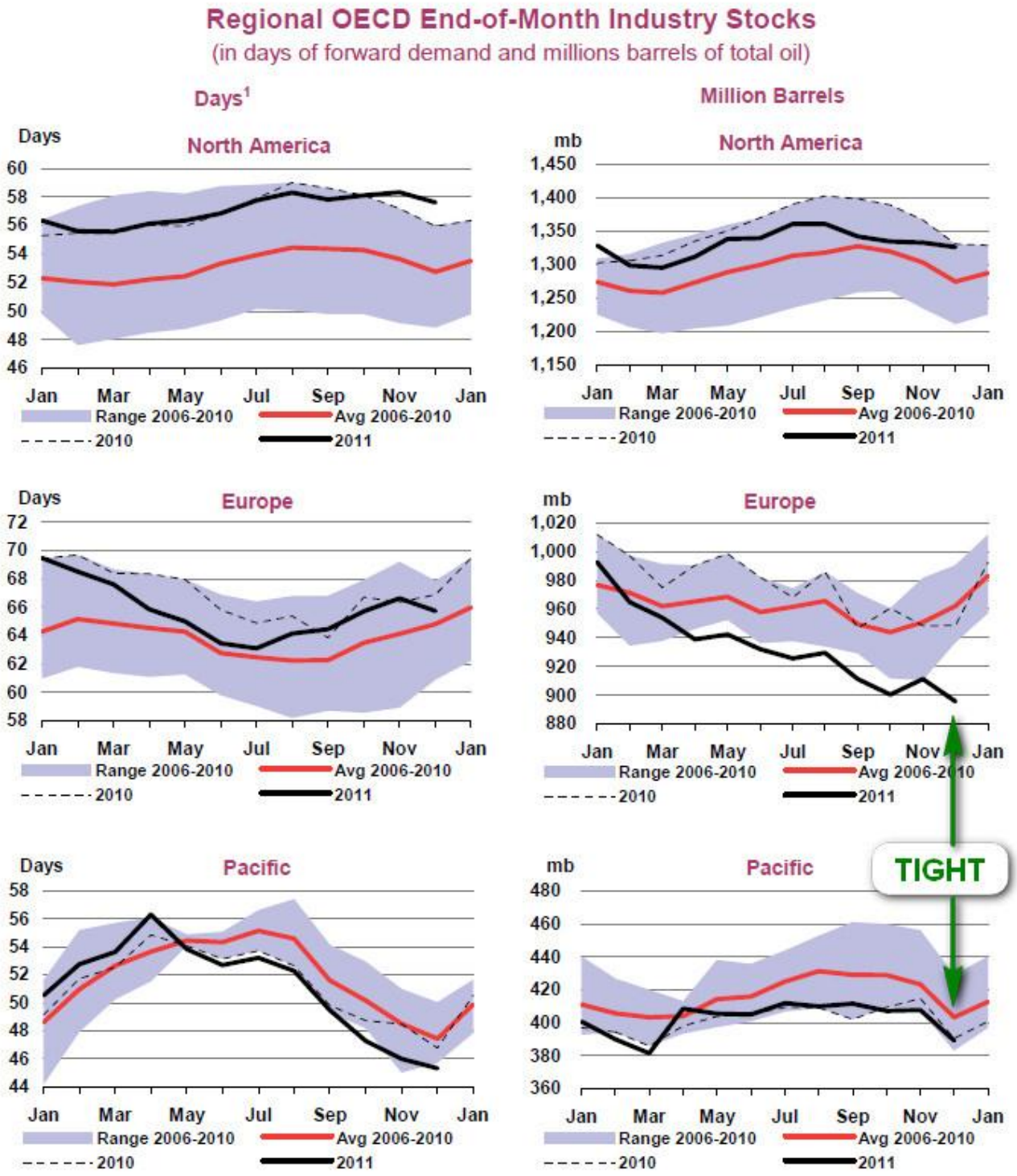
As we realize OPEC can no longer cap oil and therefore gasoline prices, clamor for the United States to use its strategic reserves to moderate prices will rise. Absent a severe supply disruption, this would be deeply unwise. If the US tries to use strategic stocks to keep gasoline prices stable, it is likely to end up with neither strategic stocks nor gasoline price stability. There are several points to consider:

- Strategic stocks are finite and too small to have a lasting impact on oil prices. In a 90 million barrel per day market prone to large, unexpected swings in supply and demand, sporadic SPR withdrawals of 1 to 3 million barrels a day are unlikely to influence global fundamentals and therefore prices other than in the very short term, if at all.
- Officials do not have sufficient information to know when or how much oil to add or subtract from the global market to keep prices stable, and could well run out of supplies before they managed to flatten prices. Good data on global oil market supply and demand is lacking, and the best data are available only with lags measuring calendar quarters and years.
- Even if the US had sufficient information, decisions on when to use the SPR would be influenced by political pressures and factors rather than economic ones.
- Using the SPR would induce private companies to hold lower stocks, and OPEC could offset the impact by cutting production, as seen after President Clinton ordered an SPR stock draw in September 2000.
- Frequent, capricious frittering away of strategic stocks in a futile attempt to influence global oil prices would *increase* market uncertainty and price volatility.

2011, http://dallasfed.org/research/eclett/2011/el1110.html; and "Interim Report on Crude oil, Interagency Task Force on Commodity Markets, CFTC, July 2008."

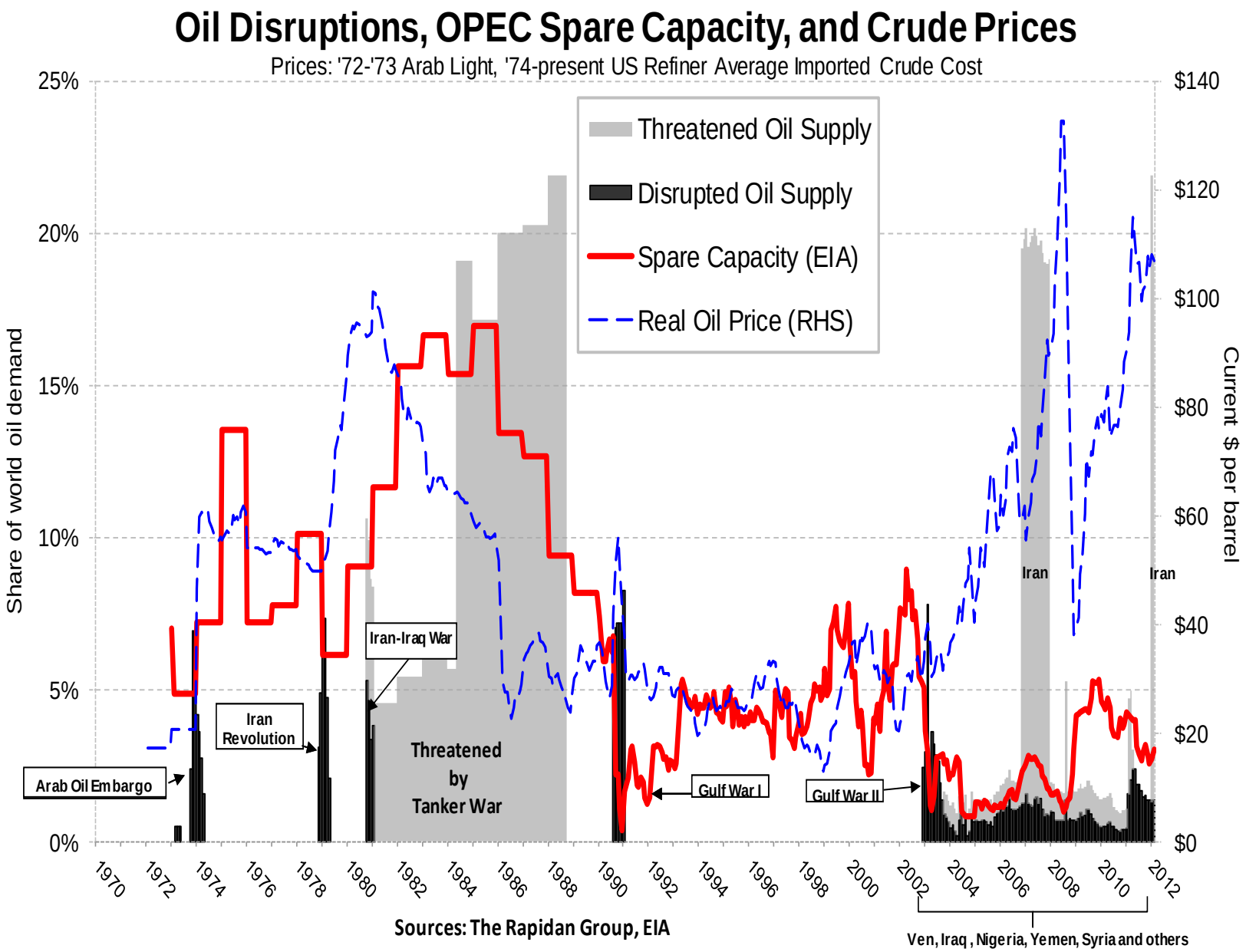
[10] "A Crude Predicament: The Era of Volatile Oil Prices," Robert McNally and Michael Levi, *Foreign Affairs*, July/August 2011

Figure 1



IEA Oil Market Report, February 10, 2012

Figure 2


Oil Disruptions, OPEC Spare Capacity, and Crude Prices
Prices: '72-'73 Arab Light, '74-present US Refiner Average Imported Crude Cost
Threatened Oil Supply
Disrupted Oil Supply
Spare Capacity (EIA)
Real Oil Price (RHS)
Share of world oil demand
Current $ per barrel
25%
20%
15%
10%
5%
0%
$140
$120
$100
$80
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$40
$20
$0
Arab Oil Embargo
Iran Revolution
Iran-Iraq War
Threatened by Tanker War
Gulf War I
Gulf War II
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Sources: The Rapidan Group, EIA
Ven, Iraq , Nigeria, Yemen, Syria and others

Figure 3

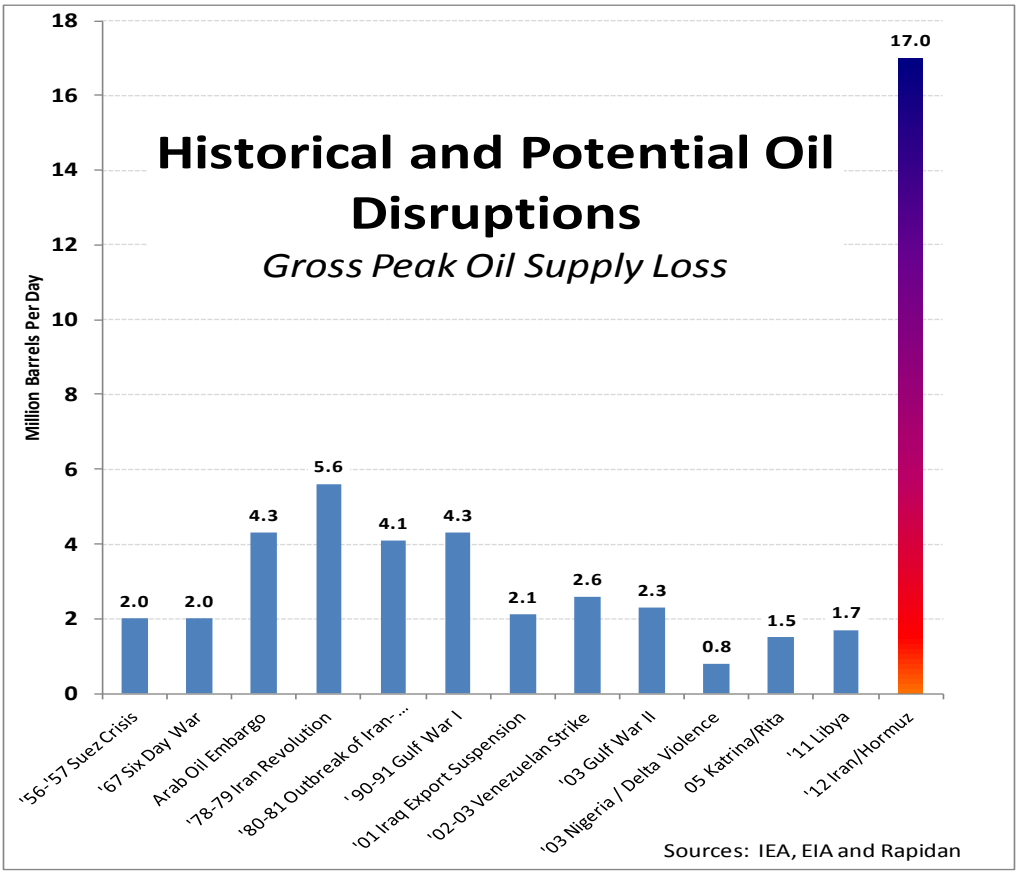

Figure 4